An Analysis of

An Economic Report to the Governor of the State of Tennessee

A Report to the State Funding Board

prepared by

Dr. Daniel Cohen-Vogel
Staff Economist

Office of Research
Comptroller of the Treasury

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Introduction

Each year the Center for Business and Economic Research (CBER) at the University of Tennessee publishes *An Economic Report to the Governor of the State of Tennessee*. The report contains forecasts for key economic variables and commentary on the extent to which changes in these variables may affect local, state and national economies. CBER uses the national economic forecasts of Wharton Econometric Forecasting Associates (WEFA) for its national-level data; the forecast and analysis for Tennessee is derived from the Tennessee Econometric Model (TEM). In addition, three other models are applied in the development of the agricultural component of the Tennessee economic forecasts. Both the U.S. and Tennessee forecasts presented in the February, 1999, *An Economic Report to the Governor* are based on data from December, 1998.

The Tennessee State Funding Board is required by statute (see Appendix A) to comment on the plausibility of the forecasted growth rate of the state's economy, as measured by the growth rate of nominal personal income in Tennessee. The forecasted growth rate is used as a basis for determining the potential increase in appropriations from state tax revenues for the next fiscal year. The purpose of this analysis is to assist the Tennessee State Funding Board in its consideration of CBER's forecasts for the Tennessee economy in 1999 by both highlighting and elaborating on certain points in CBER's report and critiquing other points.

The next two sections of this report summarize CBER's forecasts for the U.S. economy (based on the WEFA forecasts) and the Tennessee economy, presenting those forecasts within a frame of other related economic trends and predictions made by other organizations. The fourth section emphasizes some useful concepts to keep in mind when evaluating the forecasts in general, and the concluding section highlights some key issues raised both by the CBER report and by other observations of the state's economy.

U.S. Forecast

Gross Domestic Product (GDP). Average real GDP growth for 1999 is forecast to be 2.02% for the year, with stronger growth in the last two quarters' forecasts bringing up the annual average from an expected slow start early in 1999. Average real (i.e. inflation-adjusted) GDP growth for 1998 was forecast at 3.57% by WEFA, revised downward from last year's forecast of 4.15% for 1998 real GDP growth.

Forecast Comparison: 1999[1] Real GDP Growth (92$)	
Agency	**Rate**
Michigan-RSQE	3.5%
Northern Trust	3.3%
Philadelphia FRB	3.2%
Bank of America	3.1%
First Union	3.0%
FannieMae	2.6%
MTSU	2.4%
CBO	2.3%
Blue Chip Consensus	2.2%
Reg. Fin. Assoc.	1.7%
WEFA (CBER)	**2.0%**
Forecast Average	**2.4%**
Forecast Range: Low	1.7%
Forecast Range: High	3.5%

Table 1

WEFA's forecasts for GDP growth in 1999 are apparently somewhat conservative compared to other forecasts. Its forecast for GDP growth is four-tenths of a percentage point below the average of the forecast sample. As with some of the other forecast comparisons, WEFA's forecast for GDP growth may be due as much to the date at which the forecast was done as the methodology. Four of the lowest five forecasts for GDP growth are from forecasts done in

GDP Growth by Quarter: 1998-1999 (92$) WEFA (CBER) Forecast					
1998 Avg.	**1999 Q1**	**1999 Q2**	**1999 Q3**	**1999 Q4**	**1999 Avg.**
3.6%	1.5%	1.6%	2.5%	2.6%	**2.0%**

Table 2

[1] This table is compiled from information contained in recent forecasts of Bank of America (February, 1999), Blue Chip Consensus (December, 1998), Congressional Budget Office (January, 1999), Fannie Mae (February, 1999), Federal Reserve Bank of Philadelphia (February 22, 1999), First Union Bank (January, 1999), MTSU (December, 1998), Northern Trust (February, 1999), Regional Financial Associates (November, 1998), and RSQE (March 11, 1999).

November and December, 1998, while the remaining forecasts in the sample were done between January and March, 1999. In some of the subsequent U.S. forecast comparisons, the timing of the forecasts appears to contribute to the differences among them, and the issue of timing should be kept in mind when evaluating those differences.

Inflation. The inflation rate is expected to stay at its current low levels in 1999. In 1999, WEFA (CBER) expects a 1.9% rate of inflation as measured by the Consumer Price Index, 1.4% as measured by the GDP Implicit Deflator, and 1.5% as measured by the Personal Consumption Deflator.

WEFA's forecast is just below the sample average; however, the other inflation forecasts done in the latter part of 1998 (MTSU, RFA, Blue Chip) are the three highest in the sample, while WEFA is near the bottom.

As was noted in the 1998 *An Analysis of the Economic Report to the Governor*, (quoting the Kansas City Federal Reserve Bank) CPI inflation in 1998 "will be reduced by an updating of the basket of goods and services for which the index tracks prices. Effective in January, the basket is based on the expenditures of the typical consumer over 1993-95 instead of 1982-84."

Forecast Comparison: 1999[2]
Inflation (CPI)

Agency	Rate
MTSU	2.4%
Reg. Fin. Assoc.	2.3%
Blue Chip Consensus	2.2%
First Union	2.2%
Northern Trust	2.1%
Philadelphia FRB	2.0%
Bank of America	1.9%
CBO	1.8%
FannieMae	1.8%
Michigan-RSQE	1.6%
WEFA (CBER)	**1.9%**
Forecast Average	**2.0%**
Forecast Range: Low	1.6%
Forecast Range: High	2.4%

Table 3

[2] This table is compiled from information contained in recent forecasts of Bank of America (February, 1999), Blue Chip Consensus (December, 1998), Congressional Budget Office (January, 1999), Fannie Mae (February, 1999), Federal Reserve Bank of Philadelphia (February 22, 1999), First Union Bank (January, 1999), MTSU (December, 1998), Northern Trust (February, 1999), Regional Financial Associates (November, 1998), and RSQE (March 11, 1999).

Unemployment Rate and Job Growth. The recent WEFA (CBER) forecast for U.S. unemployment in 1998 and 1999 are 4.5% and 4.7%, respectively. Unemployment was 5.6% in 1995, 5.4% in 1996, and 4.7% in 1997 Thus, the expectation is apparently that this decade's declines in unemployment will, for the time being, flatten out. However, WEFA (CBER) expects slight increases in unemployment in 2000 and beyond.

WEFA's (CBER) forecast of 4.7% for U.S. unemployment in 1999 is slightly above the average of other forecasts (4.6%). The range of estimates here is relatively small, showing fairly stable U.S. expectations.

Forecast Comparison: 1999[3] Unemployment Rate	
Agency	**Rate**
Reg. Fin. Assoc.	4.9%
Blue Chip Consensus	4.8%
First Union	4.8%
CBO	4.6%
Bank of America	4.5%
FannieMae	4.5%
MTSU	4.5%
Northern Trust	4.5%
Philadelphia FRB	4.5%
Michigan-RSQE	4.4%
WEFA (CBER)	**4.7%**
Forecast Average	**4.6%**
Forecast Range: Low	4.4%
Forecast Range: High	4.9%

Table 4

[3] This table is compiled from information contained in recent forecasts of Bank of America (February, 1999), Blue Chip Consensus (December, 1998), Congressional Budget Office (January, 1999), Fannie Mae (February, 1999), Federal Reserve Bank of Philadelphia (February 22, 1999), First Union Bank (January, 1999), MTSU (December, 1998), Northern Trust (February, 1999), Regional Financial Associates (November, 1998), and RSQE (March 11, 1999).

Tennessee Forecast (and Recent Trends)

Gross State Product (GSP). CBER forecasts Tennessee's real GSP to have increased 2.7% in 1998, as compared to nearly 3.6% for U.S. GDP. This projected GSP growth rate in Tennessee is much lower than the 3.8% in 1997. CBER forecasts the Tennessee real GSP growth rate will stay at about the same level in 1999, growing 2.8%. WEFA's forecasted U.S. GDP growth rate in 1999 is 2.0%.

Annual Real GSP Growth: 1998-2000 (92$)[4] CBER Forecast		
1998	1999	2000
2.7%	2.8%	2.8%

Table 5

CBER's outlook for the production of goods and services in Tennessee is brighter than the outlook for the U.S. as a whole for the entire forecast horizon (through 2007). CBER expects an average real GSP growth in excess of 3.2% through the year 2007, compared to only 2.4% for average real U.S. GDP growth.

Per capita real GSP in Tennessee is expected to dip, however, to 1.6% in 1998 and 1.7% in 1999, as population growth is expected to continue to decline somewhat from its high levels of the early 1990s. Per capita real GSP growth in Tennessee is forecast at an average of 2.1% from 1998 to 2007, compared to the U.S. average real per capita GDP of 1.6% for that period.

[4] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999.

Nominal Personal Income. CBER expects nominal personal income in Tennessee to increase 4.53% in 1999. Comparatively, WEFA (CBER) projects U.S. nominal personal income growth to be 3.89% in 1999, down from a forecast of 4.84% for 1998. (As an additional comparison, the MTSU forecast for nominal personal income growth was 4.3%.)

Forecasted Tennessee Nominal Personal Income Growth: 1999[5]	
CBER Forecast	
Wages and Salaries	5.0%
Other Labor Income	4.0%
Proprietors' Income	4.8%
Rent, Interest & Dividends	2.9%
Transfer Payments	4.0%
Total	**4.5%**

Table 6

The forecasted components of nominal personal income for 1999 show that wages and salaries are the fastest growing component of personal income. CBER's ten-year annual forecast shows wages and salaries to be increasing in a fairly stable trend in comparison to the other components of personal income. Since that component comprises nearly 60% of total personal income, and since the second largest component of personal income (transfer payments) is also expected to grow at similar rates, the CBER forecasts show a fairly steady increase in the growth of personal income over the coming decade. The long-term outlook (through 2007) according to CBER is that nominal personal income will reach and perhaps surpass its high levels of the earlier part of the 1990s. CBER forecasts an average of 5.8% from 1998 to 2007.

Other Measures of Personal Income. CBER also forecasts growth estimates for other measures of personal income. For the purposes of projecting the capacity of income growth to support (through taxes) the state's fiscal needs, it makes sense to examine per capita real personal income growth. That measure more accurately explains the growth in purchasing power (i.e. taxable sales) due to personal income growth by accounting for population growth and inflation. Table 7 shows that per capita real personal income growth is projected to drop slightly from 2.4% in 1998 to 1.9% in 1999.

The table also shows that the per capita real personal income growth forecast is 2.6 percentage points below the nominal personal

[5] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999.

income growth forecast, and while nominal personal income growth is expected to rise from 1998 to 1999, per capita real personal income growth is expected to fall during that period due to inflation and population growth.

Measures of Personal Income Growth[6] CBER Forecast		
Measure	*1998*	*1999*
Nominal personal income	4.3%	4.5%
Inflation-adjusted personal income	3.5%	3.0%
Nominal per capita personal income	3.2%	3.4%
Inflation-adjusted per capita personal income	2.4%	1.9%

Table 7

Map 1 (Appendix A) shows the distribution of per capita real personal income by county in 1996 (the most recent year for which county-level personal income data are available). Among other things, it shows that the highest per capita personal income levels are in the four largest metropolitan areas of Davidson, Hamilton, Knox, and Shelby counties, with multiple counties surrounding Davidson having among the highest personal income levels.

Map 2 (Appendix A) shows the growth in per capita real personal income from 1995 to 1996. The five highest growth counties in that year, all with per capita real personal income growth above 6%, were Haywood, Lake, Lauderdale, Perry, and Warren. The five lowest growth counties in that year, all with negative per capita real personal income growth, were Benton, Clay, Lewis, Macon, and Trousdale. Two explanations for this distribution of personal income growth are population changes and employment changes. The following sections will delve further into the employment changes that have significantly affected changes in county-level incomes.

Personal Income Forecast Error. In 1998, CBER forecasted growth of 5.1%; actual growth was 4.9%. CBER noted at the time that the 1997 employment and job growth data indicated that the forecast of 5.1% growth should be considered a "worst-case scenario for the state's short-

[6] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999.

term prospects." Yet, the estimate was still about two-tenths of a percent above actual personal income growth.

CBER's slight overestimates in the last couple years' forecasts possibly suggest that the state's economy is slowing somewhat from its pace in the earlier part of the 1990s. Such a conclusion is clearly in line with the 1999 *An Economic Report to the Governor*, which notes that the recent decade's trends are not sustainable. The overestimates are also probably the result of a forecast methodology that is based on the past decade's trend. Thus, the current year's estimate may still slightly over-estimate the actual growth rate, but if trends continue similarly to last year, then CBER's forecast is likely to converge on the actual growth rate. As an additional comparison, the MTSU forecast for nominal personal income growth in Tennessee is 4.3%, which is equal to 1998 personal income growth and slightly below CBER's forecast for this year.

Tennessee Nominal Personal Income Forecast Errors: 1995-1998[7]

Year	Actual	Forecast	Error	% Error
1995	6.7	7.2	+0.5	13.4%
1996	4.7	5.8	+1.1	23.4%
1997	5.4	5.5	+0.1	1.9%
1998	4.9	5.1	+0.2	4.1%

Table 8

Sales Tax Base and Collections. Per capita taxable sales growth is generally fairly erratic, and that is certainly the case in the last few years. Despite remarkably high growth in 1997, CBER's updated forecast for 1998 projects a 1.7% real decline in per capita taxable sales. CBER forecasts real per capita taxable sales growth of 1.4% in 1999,

Per Capita Taxable Sales Growth: 1995-1999 (92$)[8]

CBER Forecast				
1995	1996	1997	1998	1999
3.8%	1.3%	5.7%	-1.7%	1.4%

Table 9

[7] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999. Information also taken from earlier such *Economic Report*s and compiled in past analyses by the Comptroller's office.

[8] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999.

however. One explanation given for the erratic nature of taxable sales forecasts in general is the lack of reliability of the data. For example, Dr. Fox (CBER) has expressed little confidence in the likelihood that taxable sales really had negative growth in 1998. Unfortunately, the data used to derive that estimate are the only data available.

Map 3 (Appendix A) shows the concentration of per capita sales tax collections in each county as a percentage of the Tennessee average in fiscal year 1998.[9] The average statewide was $750. Davidson and Sevier counties had the highest per capita sales tax collections in the state, with 161% and 193%, respectively, over the statewide average. Nine other counties[10] had per capita taxable sales above the state average.

CBER projects 4.0% nominal taxable sales growth and 2.5% real taxable sales growth in 1999. Map 4 (Appendix A) shows the nominal change in sales tax collections by county from fiscal year 1997 to fiscal year 1998. Nominal sales tax collections grew an average of 4.6% in that year. Two counties, Unicoi and Perry, experienced sales tax growth over 15% between fiscal years 1997 and 1998. Ten counties[11] had negative growth, with Morgan and Hawkins showing the biggest declines statewide of 7.0% and 5.3%, respectively.

Map 5 (Appendix A) shows the change in nominal per capita sales tax collections by county from fiscal years 1997 to 1998. Per capita sales tax growth averaged 3.4% across the state. Unicoi County was the highest, with 19.5% growth. Eight other counties[12] had between eight and twelve percent growth, and nineteen counties had negative per capita taxable sales growth.

Unemployment Rate and Job Growth. Like Tennessee, national non-agricultural job growth has been affected by reductions in demand for

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[9] Notice the distinction between taxable sales and sales tax collections here. Ideally, the taxable sales times the sales tax rate should yield sales tax collections. However, the two are not exactly parallel, since there are refund, credit, and exemption issues, in addition to data collection disparities and imperfect tax collections, that may differentiate the two measures.

[10] The counties with per capita taxable sales between 100% and 150% of the state average in FY1998 were: Coffee, Hamblen, Hamilton, Knox, Madison, Putnam, Shelby, Washington, and Williamson.

[11] The counties with negative sales tax growth from FY1997 to FY1998 were: Anderson, Benton, Campbell, Carroll, Giles, Hawkins, Maury, Morgan, Roane, and Van Buren.

[12] The counties with 8-12% growth in per capita sales tax collections were: Cannon, Fayette, Grainger, Hancock, Meigs, Moore, Perry, Williamson, and Wilson.

U.S. exports due to a strong dollar and by the movement of manufacturing jobs overseas. However, the larger-than-average decline in manufacturing jobs in Tennessee and a 1998 national unemployment rate of 4.5% (as compared to 4.2% in Tennessee) suggests that the U.S. as a whole has more room for growth than the Tennessee economy.

CBER forecasts the unemployment rate in Tennessee to rise slightly from 4.2% in 1998 to 4.3% in 1999. CBER also expects total nonagricultural employment in Tennessee to grow 1.2% in 1998 and 1.4% in 1999. The explanation for the rise in both employment and the unemployment rate is presumably found in the rate of growth of the labor pool relative to labor force participants and possibly with the employment in the agricultural sector.

Non-Agricultural Job Growth: 1997-2000[13]
CBER Forecast

	1997	1998	1999	2000
Tennessee	1.9%	1.7%	1.7%	1.9%
U.S.	2.6%	2.5%	1.1%	1.2%

Table 10

As with other indicators, unemployment rates are not evenly distributed across the state. Map 6 shows unemployment in Tennessee counties in January, 1999. The average unemployment in that month was 4.8%. The highest unemployment statewide was in Johnson County, which had 18.2% unemployment, followed by Wayne, Sevier, Clay, Lawrence, and Lewis, which were all above 13.5%. It is necessary to note that Sevier County and others surrounding it experience large seasonal fluctuations in unemployment due to the tourist industry. The same is true of other counties with dominant industries or crops that primarily employ people during only part of the year. Three counties had unemployment below 3%, with Williamson the lowest in the state at 1.9%.

Map 7 shows the change in unemployment from January, 1998 to January, 1999. On average, statewide unemployment dropped 0.3% during that period. The biggest increase in unemployment was in Johnson County, which rose 8.8% in that year, followed by Lawrence and Hickman, which rose 5.9% and 4.1%, respectively. The biggest drops in unemployment were in Trousdale (-3.6%), Clay (-3.4%), and Lake (-3.3%) counties.

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[13] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. February, 1999.

Export Balance and Currency Fluctuations. Tennessee exported goods and services valued at $9.9 billion in 1997. Exports constituted 6.6% of Tennessee's GSP in that year. Also in that year, an estimated 22% of the state's agricultural cash receipts were derived from exports. Though export growth has flattened out in the last few years, CBER points out that export growth in Tennessee increased 98% from 1991 to 1997, significantly outpacing U.S. average export growth.

Last year at this time, the uncertainty about Asian currency instabilities was a serious concern for U.S. exporters. As CBER points out, Tennessee's relatively low reliance on Asian demand for the state's goods shielded it from the severity of the currency crises impacts. Over 60% of Tennessee's exports go to North America and the European Community. However, the last two years have also seen some relative currency declines and other economic instability among some of Tennessee's major trading partners, such as Canada, Mexico, and Japan, which comprise approximately 25%, 12%, and 7% of Tennessee's exports, respectively.[14]

Overall, Tennessee's exports comprised almost 7% of the state's GSP in 1997. Thus, a relative devaluation of the currencies of Tennessee's largest trading partners should be watched with concern. As the most prominent example, Canada's imports from Tennessee generate nearly 2% of the state's total output.

Table 11 shows the percent variation[15] in the currencies of Tennessee's largest eight trading partners over a recent nine-month period. Japan, which accounts for 7% of Tennessee's exports, showed the largest variation over that period.

Nine Month Percent Variation in Foreign Currencies (of Tennessee's Top Eight Trading Partners from 6/1/98 to 3/1/99)

	Canada	*Mexico*	*Japan*	*U.K.*	*Germany*	*Holland*	*France*	*Korea*
% variation	1.9%	5.3%	9.4%	1.5%	3.4%	3.4%	3.4%	6.1%

Table 11

[14] Currency fluctuations may also be more important in specific regions, such as Memphis, which sends over one-third of its exports to Asia.

[15] The percent variation is measured by the coefficient of variation, which is the standard deviation in the daily exchange rate expressed as a percentage of the average daily exchange rate over the period.

Tables 12 and 13 show the changes in the exchange rates of Tennessee's top eight trading partners over a nine- and fifteen-month period, respectively. A positive percentage implies a devaluation in the U.S. dollar relative to the foreign currency. Such a devaluation in the dollar means that U.S. (and thus Tennessee) goods become less expensive to the importing country. Conversely, a negative change means that U.S. goods become more expensive to the importing country.

It is worth noting here that Canada, which purchases 25% of Tennessee's exports, has experienced a 15% to 20% rise in the value of its dollar relative to the U.S. dollar since that country's currency slump over two years ago. This change is a positive one for Tennessee exporters.

Nine Month Change in Exchange Rates (of Tennessee's Top Eight Trading Partners from 6/1/98 to 3/1/99)								
	Canada	***Mexico***	***Japan***	***U.K.***	***Germany***	***Holland***	***France***	***Korea***
% change	4.1%	11.2%	-14.54%	1.7%	0.0%	0.0%	0.1%	-12.9%

Table 12

Fifteen Month Change in Exchange Rates (of Tennessee's Top Eight Trading Partners 12/1/97 to 3/1/99)								
	Canada	***Mexico***	***Japan***	***U.K.***	***Germany***	***Holland***	***France***	***Korea***
% change	6.4%	21.2%	-7.4%	4.8%	0.3%	0.3%	0.5%	3.8%

Table 13

It is also worth pointing out that the differences in inflation rates between countries affects the exchange rates. As was noted earlier, Tennessee's GSP deflator forecast is significantly higher than the U.S. GDP deflator forecast, due to the mix of industries in Tennessee versus the United States as a whole. This may have implications for the exchange rate specifically related to Tennessee goods, and these implications are not picked up in the tables above.

Uncertainty Still Reigns

The Importance of Assumptions. It is always worth a reminder that economic forecasts are based on many underlying assumptions. The few forecast scenarios published by the Congressional Budget Office (CBO), shown in Table 14, illustrate this point. The CBO's January, 1999

baseline projections for the future state of the U.S. economy are presented in depth in *The Economic and Budget Outlook: Fiscal Years 2000-2009*. The baseline estimates are based on the assumptions that economic growth will not continue at present rates and that the inflation rate will rise.

However, three alternative forecast scenarios are given: (a) the "continued good news" scenario assumes that the baseline underestimates growth and overestimates inflation; (b) the "boom-bust" scenario assumes a tight monetary response to rising inflation, which leads to a recession after the coming year; (c) "financial turmoil" scenario assumes that the economy has peaked and is now entering a recession exacerbated by global financial instability. The results of the three alternative sets of assumptions are presented along with the baseline scenario in the table in this section.

Results of Alternative Forecast Scenarios: 1999[16]

Congressional Budget Office Forecasts

measure	baseline	continued good news	boom-bust	financial turmoil
Nominal GDP Growth	4.5%	5.0%	2.5%	4.1%
Real GDP Growth	2.7%	3.0%	0.7%	2.3%
CPI Inflation	2.4%	2.8%	2.3%	2.5%
Surplus (billion $)	115	120	85	107

Table 14

Like the Funding Board, the CBO is primarily concerned with how the forecast assumptions impact tax revenues. The alternative forecasts show that a variation in the assumptions used to generate the baseline forecasts creates a variation in the forecasted budget surplus from over 4% above to 26% below the predicted surplus.

A Note on Aggregation. The distribution of changes in Tennessee's economy are hidden by an exclusive focus on state-wide averages. The timing and scale of the aggregation are important. With regard to the scale of measurement, CBER has in past years presented county-level data. Due to data collection problems, it appears that the less aggregated data are less reliable than the statewide averages. However, focus on

[16] *The Economic and Budget Outlook: Fiscal Years 2000-2009*. Congressional Budget Office: Washington, D.C. January, 1999.

disaggregated data do draw necessary attention to localized economic trends and fiscal ups and downs.

Also, the averages presented in this report compare year-over-year annual averages for the various economic indicators. However, such comparisons overlook the cyclical and sporadic nature of economic phenomena. There are two potential impacts of such a data aggregation. First, quarterly (or other periodic) fluctuations are not represented, though they potentially impose on the state a requirement to purchase the service capacity for a full year (or longer), even if the actual service requirement is a shorter length of time. For example, services for unemployed individuals, needed by the individuals during only part of the year, may have to be available during the entire year. Second, there are debates among macroeconomists as to whether year-over-year or quarter-over-quarter forecasts are more accurate or useful measures, given the government's operation according to a fiscal year rather than a calendar year.

Conclusions

CBER's forecast of 4.5% growth in Tennessee nominal personal income for 1999 appears reasonable, given the record of recent years and national trends. Most other CBER forecasts also appear to be of reasonable magnitude, and the U.S. forecasts of WEFA, which are used by CBER in its Tennessee forecast model, are generally close to the average of other U.S. forecasts. WEFA's forecasts appear to be slightly more conservative than the average of the forecasts sampled.

Among CBER's forecasts, it is worth noting in particular that the expectation appears to be for relatively low GSP growth and a slightly higher unemployment rate over the coming two years, at least, and that long-term growth is expected to be relatively strong. Also of note is that although taxable sales are expected to become positive in the coming year (at least as represented by the existing data), forecasted nominal taxable sales growth (4%) is expected to be lower than personal income growth.

Some of CBER's forecasts suggest that the Tennessee economy is expected to continue to be insulated from national economic downturns in the coming few years. This raises questions when viewed in the context of Tennessee's higher-than-average exposure to manufacturing

declines. Fiscal year 1997-1998 saw a larger than average decline in manufacturing employment in Tennessee, and nearly 20% of Tennessee's workforce is concentrated in manufacturing, as opposed to 15% of the U.S. workforce. A recent issue of *State Policy Reports* rated Tennessee just below the U.S. average in "economic momentum" and placed the state in the bottom ten nationally in its "Average Economic Development Report Card." These trends and ratings should be of concern to policymakers and should be weighed against the relatively high growth projections of CBER.

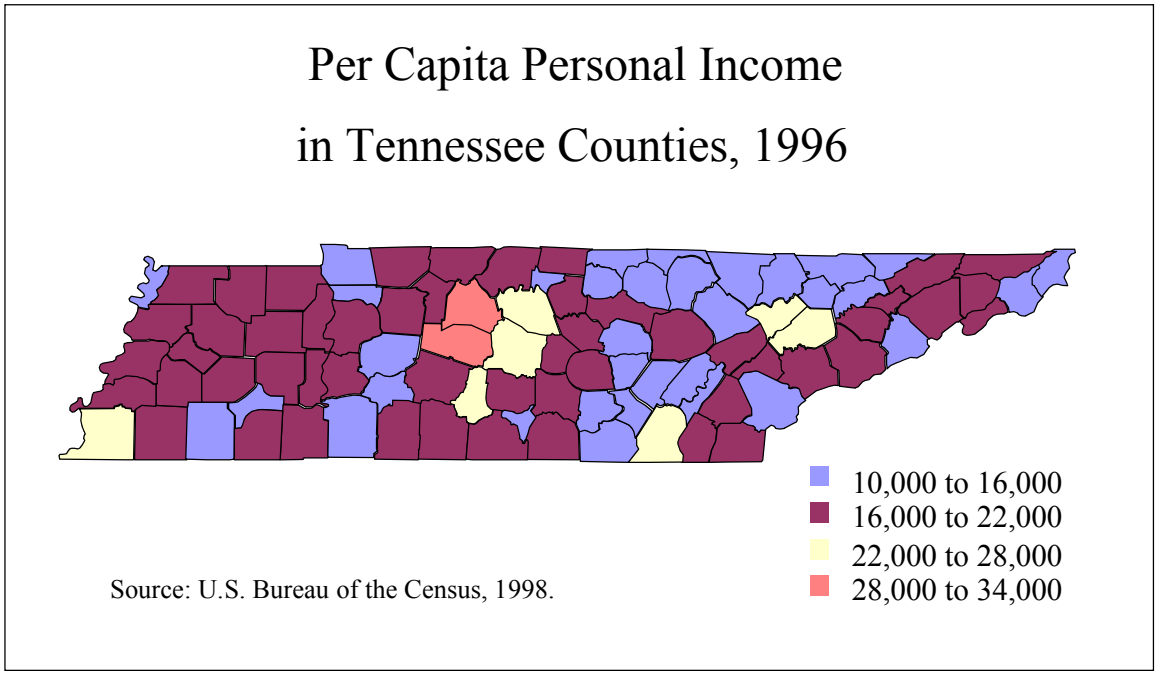
The Funding Board may wish to consider the following with respect to the CBER forecasts and the current state of the Tennessee economy:

(1) the effects of low inflation on sales tax revenue growth;
(2) the forecasted slow growth in taxable sales and the apparent instability of taxable sales;
(3) nominal personal income forecasts for 1995 through 1998 were higher than actual growth rates, though the 1997 and 1998 forecasts were very close to actual growth;
(4) the continued population growth (albeit slowing) in Tennessee and the demand such growth will place upon the state's fiscal responsibilities;
(5) the fastest growing components of personal income are wages and salaries and proprietors' income; and
(6) the data used in the WEFA and CBER forecasts may have become outdated since the forecasts were made, and current revenue estimates may thus wish to adjust to account for more recent economic phenomena.

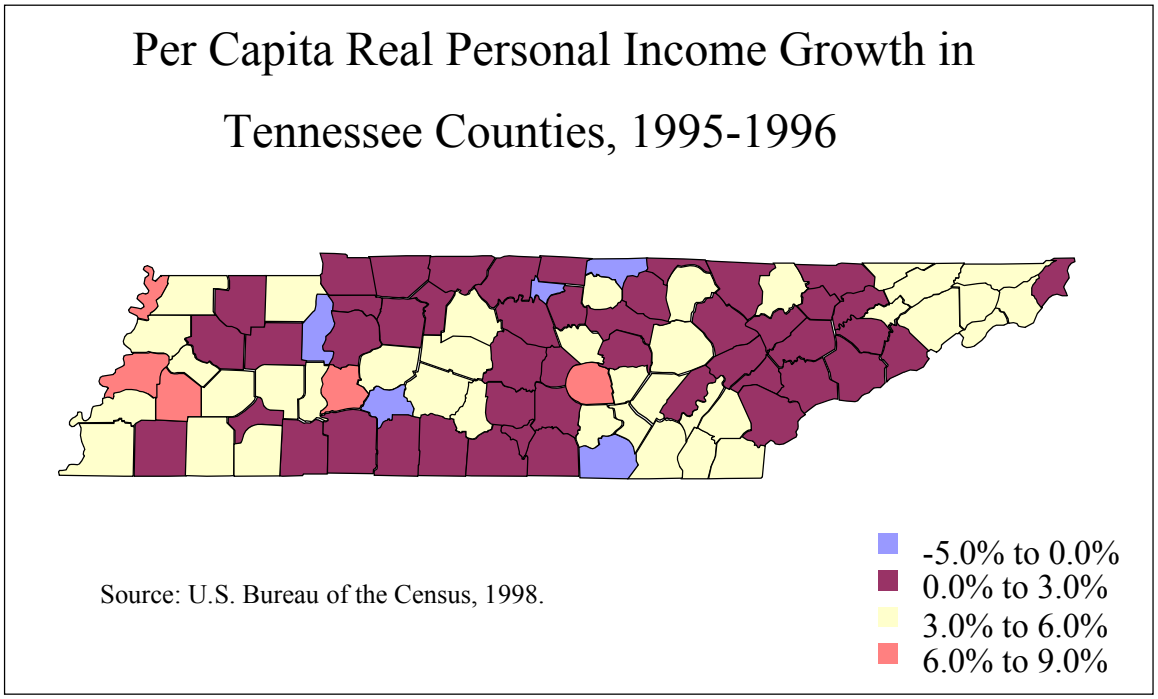
Despite concerns over the reliability of county-level data, the distribution of economic indicators and trends across the state represent, to some degree, a potential distribution of future spending needs. For example, areas experiencing high unemployment and low income growth are often counties with a relatively high reliance on textile manufacturing for jobs. Though average unemployment in Tennessee overall is relatively low and stable, the distribution reveals a number of counties with extremely high unemployment as well as low likelihood of job creation in the near future. Economic development spending, such as the workforce training emphasized by CBER in this and past reports, may need to be more heavily concentrated in those areas than in other parts of the state.

Appendix A
Maps

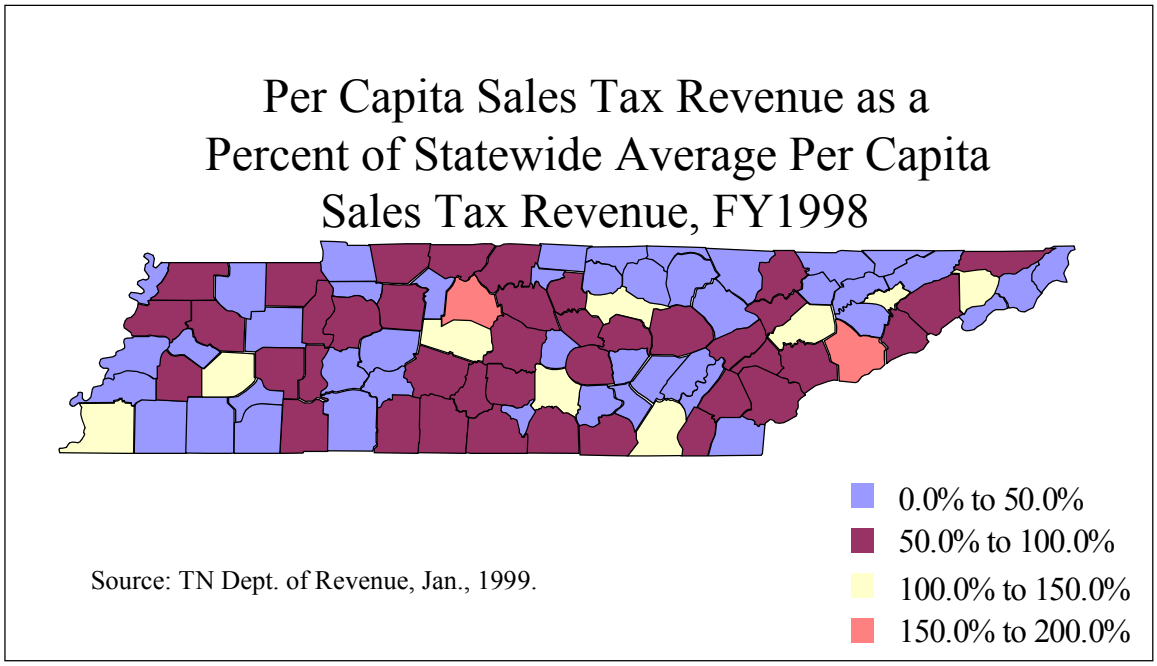
Map 1



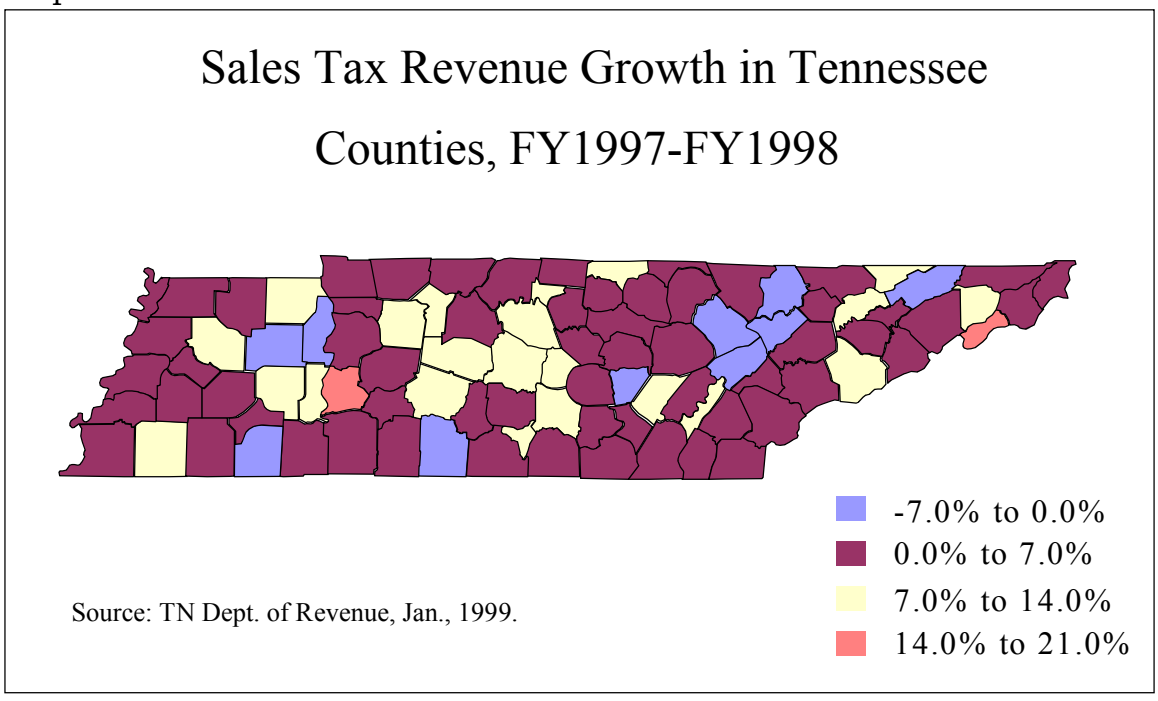
Map 2



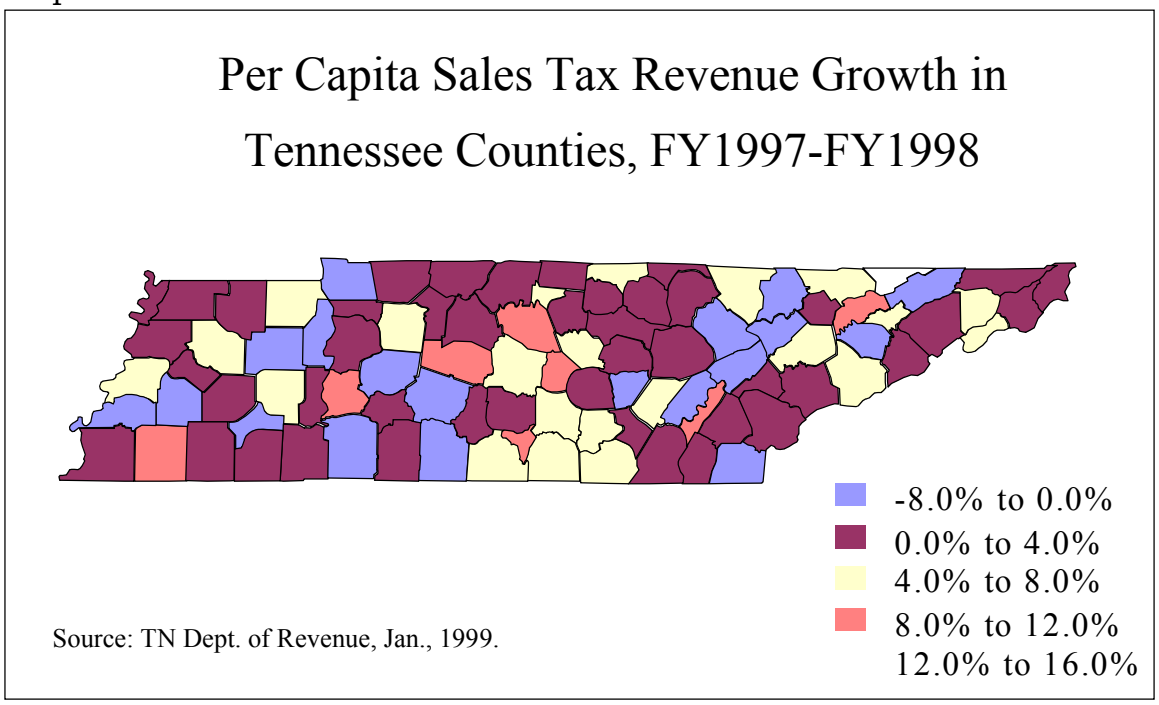
Map 3


Per Capita Sales Tax Revenue as a
Percent of Statewide Average Per Capita
Sales Tax Revenue, FY1998
Source: TN Dept. of Revenue, Jan., 1999.
0.0% to 50.0%
50.0% to 100.0%
100.0% to 150.0%
150.0% to 200.0%

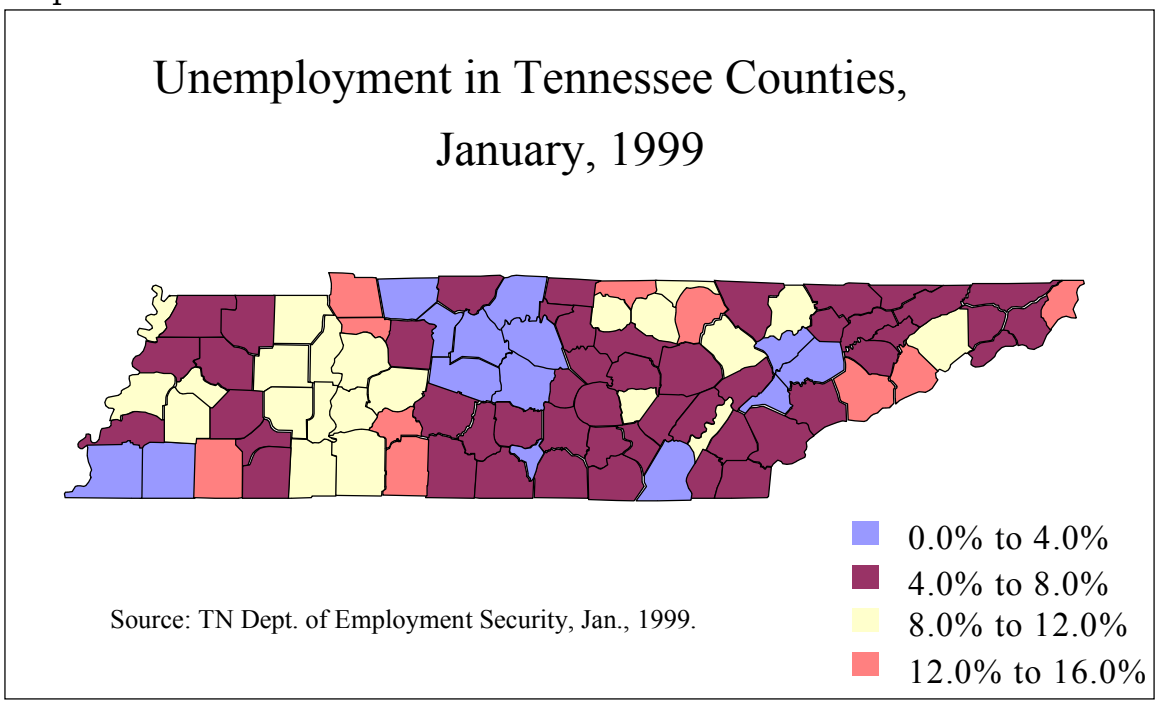
Map 4


Sales Tax Revenue Growth in Tennessee
Counties, FY1997-FY1998
Source: TN Dept. of Revenue, Jan., 1999.
-7.0% to 0.0%
0.0% to 7.0%
7.0% to 14.0%
14.0% to 21.0%

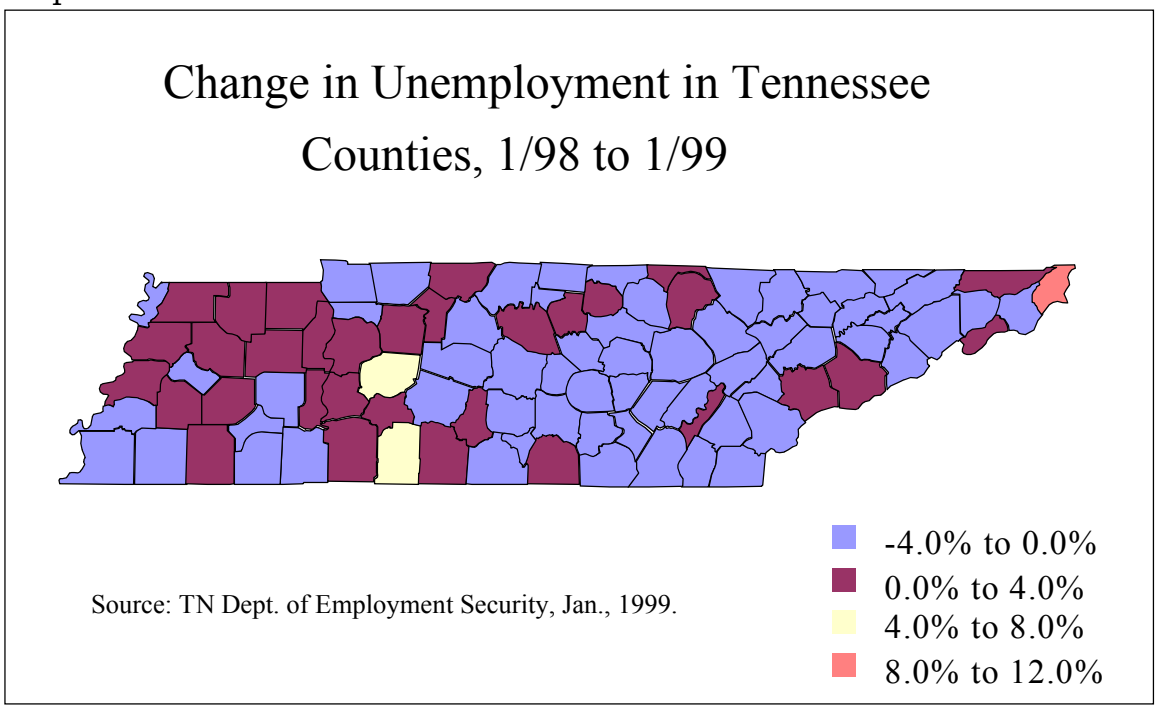
Map 5


Per Capita Sales Tax Revenue Growth in
Tennessee Counties, FY1997-FY1998
-8.0% to 0.0%
0.0% to 4.0%
4.0% to 8.0%
8.0% to 12.0%
12.0% to 16.0%
Source: TN Dept. of Revenue, Jan., 1999.

Map 6


Unemployment in Tennessee Counties,
January, 1999
0.0% to 4.0%
4.0% to 8.0%
8.0% to 12.0%
12.0% to 16.0%
Source: TN Dept. of Employment Security, Jan., 1999.

Map 7


Change in Unemployment in Tennessee Counties, 1/98 to 1/99
Source: TN Dept. of Employment Security, Jan., 1999.
-4.0% to 0.0%
0.0% to 4.0%
4.0% to 8.0%
8.0% to 12.0%

Appendix B
Statutory Requirements

Tennessee Constitution
Article II, §24 (excerpt)

In no year shall the rate of growth of appropriations from state tax revenues exceed the estimated rate of growth of the state's economy as determined by law.

TCA §9-6-201

(a) The estimated rate of growth of the state's economy shall be based upon the projected change in Tennessee personal income.

(b) Tennessee personal income shall consist of those sources of income included in the United States department of commerce's definition of "personal income."

TCA §9-6-202

(a) At least once each year, and whenever requested to do so by the commissioner of finance and administration or by the joint request of the chairs of the finance, ways and means committees of the senate and house of representatives, the state funding board shall secure from the Tennessee econometric model a report of the estimated rate of growth of the state's economy. such report shall include the major assumptions and the methodology used in arriving at such estimate.

(b) Upon receiving the report specified in subsection (a), the state funding board shall make comments relating to the reasonableness of the estimate, including any different estimate the board deems necessary. The board shall also enclose a list identifying state tax revenue sources and non-tax revenue sources, approved by the attorney general and reporter. The department of finance and administration shall provide to the board revenue estimates for each source.

(c) In the event data from Tennessee econometric model is unavailable, the funding board, after consulting with the finance, ways and means committees of the senate and house of representatives, shall obtain and/or prepare a report of the estimated rate of growth of the state's economy.

(d) The reports specified in subsections (a), (b) and (c) shall be forwarded to the commissioner of finance and administration and to each

member of the general assembly, after review and definitive comment by the finance, ways and means committees of the senate and house of representatives.

(e)(1) In November of each year, the state funding board shall conduct public hearings to develop consensus estimates of state revenue for the upcoming fiscal year, as well as any revisions to the current fiscal year estimates, as the board deems appropriate.

(2) The funding board shall request economic forecasts and revenue estimates from representatives of state higher education institution business centers located in each of the grand divisions and such other groups or persons as the funding board deems appropriate.

(3) On December 1, or as soon thereafter as practical, the funding board shall present its state revenue estimates, along with a summary of the economic forecast upon which the estimates are based, to the governor and the chairs of the senate and house finance, ways and means committees. If, in the opinion of the funding board, circumstances warrant a review of state revenue estimates it has previously presented, or upon a request of the chairs, the funding board shall consider information it deems necessary and appropriate and may revise its state revenue estimates if appropriate. Any revision to is revenue estimates and reasons therefore shall be forwarded to the governor and chairs.

TCA §9-6-203 (excerpt)

(c) When in any budget document the percentage increase of recommended appropriations from state tax revenues exceeds the percentage increase of estimated Tennessee personal income as defined in ə 9-6-201, for the ensuing fiscal year, the governor shall submit a bill or bills for introduction in both houses of the general assembly which shall contain no other subject matter and shall set forth the dollar and percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, ə 24 of the Constitution of Tennessee.

(d) When the percentage increase of appropriations of state tax revenue by the general assembly exceeds the percentage increase of estimated Tennessee personal income as defined in ə 9-6-201, for the ensuing fiscal year, the general assembly shall by law containing no other subject matter, set forth the dollar and the percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, ə 24 of the Constitution of Tennessee.

Appendix C
Years in which Appropriations have Exceeded Growth[17]

Fiscal Year 1984-1985	$396,100,000	14.60 %
Fiscal Year 1985-1986	$58,000,000	1.79 %
Fiscal Year 1986-1987	$100,000,000	2.76 %
Fiscal Year 1988-1989	$101,000,000	2.38 %
Fiscal Year 1989-1990	$74,000,000	1.59 %
Fiscal Year 1991-1992	$703,100,000	15.09 %
Fiscal Year 1992-1993	$450,000,000	8.69 %
Fiscal Year 1996-1997	$55,000,000	0.84%

Appendix D
Personal Income Definition

Personal income is a measure of income received by individuals, unincorporated businesses, and non-profit organizations. While it is an important measure of economic activity, personal income is not limited to the wages and salaries of persons. For purposes of establishing this category, the Bureau of Economic Analysis of the U.S. Department of Commerce defines persons as ". . . individuals, non-profit institutions, private non-insured welfare funds, and private trust funds . . . ."

The components of personal income include:

wage and salary disbursements;

other labor income, including employer contributions for private insurance and retirement programs;

proprietors' income, which consists of net income of sole proprietorships and non-incorporated businesses;

rental income, personal interest income, dividends and royalties;

transfer payments by businesses and government, corporate gifts to non-profit institutions, and other payments not resulting from current services or production.[18]

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[17] Tennessee Code Annotated § 9-6-203(e).

[18] U.S. Department of Commerce, Bureau of Economic Analysis.

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